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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

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REPLY TO THE ATTENTION OF:

JUN 16 1998

Mr. Johnny W. Reising
United States Department of Energy
Feed Materials Production Center
P.O. Box 398705
Cincinnati, Ohio 45239-8705

SRF-5J

RE: In-Situ Gamma Spectrometry Addendum to SCQ

Dear Mr. Reising:

The United States Environmental Protection Agency (U.S. EPA) has completed its review of the United States Department of Energy's (U.S. DOE) in-situ gamma spectrometry addendum to the Sitewide Comprehensive Environmental Response, Compensation, and Liability Act Quality Assurance Project Plan (SCQ).

This addendum supplements the SCQ by incorporating the use of real time instruments. The SCQ addendum SCQ consists of three components: the SCQ Appendix H; real time instrumentation measurement program quality assurance plan; and in-situ gamma spectrometry quality control measurements.

The document is generally adequate and appropriate for integrating the quality control aspects of the in-situ systems into routine operations. However, some deficiencies were identified.

Therefore, U.S. EPA disapproves the addendum to the SCQ pending receipt of adequate responses and their incorporation into a revised document. U.S. DOE must submit responses to comments and a revised SCQ addendum within thirty (30) days receipt of this letter.

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Please contact me at (312) 886-0992 if you have any questions regarding this matter.

Sincerely,

James A. Saric
Remedial Project Manager
Federal Facilities Section
SFD Remedial Response Branch #2

Enclosure

cc: Tom Schneider, OEPA-SWDO
Bill Murphie, U.S. DOE-HDQ
John Bradburne, FERMCO
Terry Hagen, FERMCO
Tom Walsh, FERMCO

TECHNICAL REVIEW COMMENTS ON
"IN-SITU GAMMA SPECTROMETRY ADDENDUM TO THE
SITEWIDE CERCLA QUALITY ASSURANCE PROJECT PLAN"

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

SPECIFIC COMMENTS

"SCQ APPENDIX H"

Commenting Organization: U.S. EPA Commentor: Saric
Section #: H.1 Page #: 2 Line #: Not Applicable (NA)
Original Specific Comment #: 1
Comment: This section refers to use of the high-purity germanium (HPGe) system "in certification and pre-certification characterization activities." The words "certification and" should be deleted. Another sentence may be added to state that use of the HPGe system in certification activities is under consideration and will require regulatory agency approval before it can be implemented.

Commenting Organization: U.S. EPA Commentor: Saric
Table #: 2 Page #: 5 to 7 Line #: NA
Original Specific Comment #: 2
Comment: The quality control (QC) requirements for precision associated with use of the HPGe system that are presented in this table are not fully consistent with those presented in other documents. This table should be revised to include a QC element for the Field Control Station for measurement of total uranium, thorium 232, radium 226, and potassium 40 similar to that presented in Appendix F of the "Sitewide CERCLA Quality Assurance Project Plan" (SCQ).

Commenting Organization: U.S. EPA Commentor: Saric
Table #: 2 Page #: 6 Line #: NA
Original Specific Comment #: 3
Comment: The QC acceptance criterion listed for precision of duplicates when the measured value is less than five times the minimum detectable concentration (MDC) is not consistent with information in the "In-Situ Gamma Spectrometry Quality Control Measurements" document or with standard data validation procedures. This criterion should be revised to "measurement difference $\leq \pm$MDC" as shown in both Table 8 (Page 19) and Attachment A (Page 31) of the QC measurements document.

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"REAL TIME INSTRUMENTATION MEASUREMENT PROGRAM QUALITY ASSURANCE PLAN"

Commenting Organization: U.S. EPA Commentor: Saric
Appendix #: A Page #: 28 Line #: NA
Original Specific Comment #: 4
Comment: The reference list includes use of a field instrument for detection of low-energy radiation (FIDLER) as procedure EQT-36. However, review of the quality assurance (QA) plan did not reveal what role this procedure serves. Additional information should be provided in the QA plan to explain the QA application of the FIDLER.

Commenting Organization: U.S. EPA Commentor: Saric
Appendix #: F Page #: 41 Line #: NA
Original Specific Comment #: 5
Comment: This appendix repeats the information in Table 2 of "SCQ Appendix H." Therefore, Original Specific Comment 3 on the QC acceptance criterion for precision of duplicates also applies to Appendix F and should be addressed.

"IN-SITU GAMMA SPECTROMETRY QUALITY CONTROL MEASUREMENTS"

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 6.3 Page #: 9 and 10 Line #: NA
Original Specific Comment #: 6
Comment: This section presents the pre-operational energy calibration procedure for the radiological scanning system that is still under development. Because this system, like the HPGe system, depends on battery power for operation, a post-operational check should be added to ensure that the quality of the measurements made has not been impaired by battery depletion during system operation. Use of the thorium source to repeat the pre-operational check based on the criteria in Table 2 should serve as an appropriate post-operational check. Although such a post-operational check is not required for the radiation tracking system, which uses a portable generator for power, consideration should be given to including a similar verification check in Section 6.4.

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Commenting Organization: U.S. EPA Commentor: Saric
Section #: 6.11 Page #: 25 Line #: NA
Original Specific Comment #: 7
Comment: Although not directly related to QC for in situ measurements, a data review for any discrepancies between gamma energies that might indicate a source at depth or shine should be considered for incorporation in Section 6.11.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 9.0 Page #: 27 Line #: NA
Original Specific Comment #: 8
Comment: The reference list includes American Society for Testing and Materials (ASTM) Method D 3856-88. This edition of the method is obsolete and has been replaced by Method D 3856-95. All ASTM methods must be reapproved or modified at intervals not exceeding 7 years; the other two ASTM methods cited in this section were reapproved with no significant changes in 1997. The Method D 3856-88 reference should be revised either to reflect the current edition of the method or to state only the method number (D 3856) with a note that the current edition should be used.

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